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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,405	07/28/2003	Brian K. Tanner	PANA-01066US3	7231
23910	7590	08/10/2005	SRM/TAW	
FLIESLER MEYER, LLP FOUR EMBARCADERO CENTER SUITE 400 SAN FRANCISCO, CA 94111			EXAMINER MILLER, PATRICK L	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/629,405

Applicant(s)

TANNER, BRIAN K.

Examiner

Patrick Miller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7-12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12 and 14-17 is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schirle

(6,055,120).

- With respect to claim 1, Schirle disclose a method to control spin-up parameters of a spindle motor in a disk drive including the steps of: determining a temperature of a voice coil motor (VCM) (Fig. 2, #28; Fig. 3, #71; col. 4, ll. 35-65; ambient temperature includes the temperature of the VCM); varying the spin-up parameters of the spindle motor based on the determined temperature (During spin-up, the controller drives with control signals. These signals are interpreted as voltage and/or current signals, and are labeled by the examiner as the spin-up parameters. When the temperature of the VCM gets too high, the controller shuts down the drive motor. See col. 5, ll. 12-13. This means that the voltage/current spin-up parameter is varied from a non-zero value to a zero value); and the spin-up parameters comprise at least one of: spin-up current, spin-up voltage, and commutation time (col. 3, ll. 49-52; control signals include drive voltage/current, and are interpreted as spin-up parameters).
- Schirle does not explicitly disclose determining the temperature of the VCM. However, it would have been obvious to one having ordinary skill in the art at the time of the

invention that since the VCM emits heat, the ambient temperature sensed by the temperature sensor is comprised, in part, of the temperature of the VCM. Additionally, Schirle does not disclose the parameters are either spin-up voltage or current, respectively. However, Schirle does disclose a voltage sensor that detects the voltage across the motor (col. 5, ll. 1-4). This implies that the control signal must be a voltage or a current signal to set a voltage across the motor. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that the control signals that control the spindle motor during spin-up in the device of Schirle would be voltage and/or current signals, which are interpreted as spin-up parameters by the examiner. The motivation to use current or voltage signals as spin-up parameters is to control the speed of the spindle motor, and, thus, control the speed at which the disk rotates.

- With respect to claim 4, Schirle discloses the step of setting a time out period after which the spindle motor is turned off if it has not reached a desired operational velocity (cols. 4/5, ll. 66-67/1-13), wherein the time out period is increased with a decrease in the temperature (col. 4, ll. 31-34; increased time-out period when the temperature is low).
2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schirle (6,055,120) as applied to claim 1 above, and further in view of Wallis (5,268,804).
- Schirle does not disclose a step for determining the temperature comprises measuring the resistance of the coil.
  - Wallis discloses determining the temperature of the VCM based on the resistance of a coil of the VCM (col. 4, ll. 47-63; Fig. 1, 'VCM Temperature' is sent to #4, which is a processor. Wallis measures the temperature of the VCM as described to increase the time

taken to move the data head between given positions if the temperature of the VCM is above a predetermined value (abstract). This provides the advantage of reducing the heat built up in the mechanism moving the data without reducing the access time (cols. ½, ll. 63-68/1-5).

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that the measurement circuit used to measure the resistance of a coil of the VCM to determine the temperature of the VCM could replace the temperature sensor of Schirle, thereby increasing the time taken to move the data head (of Schirle) between given positions, and providing the advantage of reducing the built-up heat in the mechanism moving the data without reducing the data access time, as taught by Wallis.

*Allowable Subject Matter*

3. Claims 7-12 and 14-17 are allowed.

- With respect to claim 7, the Prior Art fails to disclose increasing the torque to the spindle motor during startup to correspond with a decrease in the determined temperature of the VCM, where the temperature is determined by measuring the resistance of a coil in the VCM.
- With respect to claim 14, the Prior Art discloses causing the current applied to a spindle motor to increase torque during startup; however, the Prior art does not disclose setting current levels to increase the torque applied to the spindle motor at startup to correspond to the decrease in the determined temperature, where the temperature is determined using the resistance of the coil of the VCM.

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- With respect to claim 15, the Prior Art discloses applying a sequence of voltages to coil windings of the spindle motor during startup to generate a torque to cause movement of the spindle motor. However, the Prior Art does not disclose applying the sequence of voltages to generate an increased torque value to the spindle motor, and said increase value of torque corresponds with the decrease in the determined temperature, where the temperature is determined using the resistance of a coil of the VCM.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

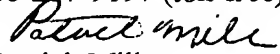
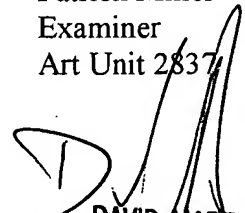
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pm  
July 22, 2005

  
Patrick Miller  
Examiner  
Art Unit 2837  
  
DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800